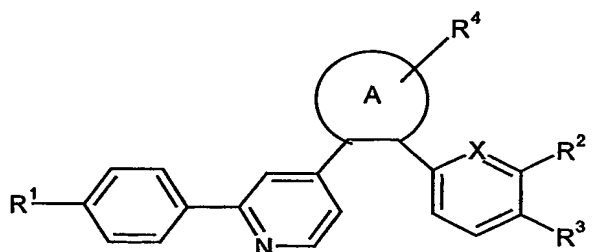


Claims

- 1 A compound of formula (I), a pharmaceutically acceptable salt, solvate or derivative thereof:



(I)

5 wherein

A is furan, dioxolane, thiophene, pyrrole, imidazole, pyrrolidine, pyran, pyridine, pyrimidine, morpholine, piperidine, oxazole, isoxazole, oxazoline, oxazolidine, thiazole, isothiazole, thiadiazole, benzofuran, indole, isoindole, indazole, imidazopyridine, quinazoline, quinoline, isoquinoline, pyrazole or triazole;

X is N or CH;

R¹ is hydrogen, C₁₋₆alkyl, C₁₋₆alkenyl, C₁₋₆alkoxy, halo, cyano, perfluoro C₁₋₆alkyl, perfluoroC₁₋₆alkoxy, -NR⁵R⁶, -(CH₂)_nNR⁵R⁶, -O(CH₂)_nOR⁷, -O(CH₂)_n-Het, -O(CH₂)_nNR⁵R⁶, -CONR⁵R⁶, -CO(CH₂)_nNR⁵R⁶, -SO₂R⁷, -SO₂NR⁵R⁶, -NR⁵SO₂R⁷, -NR⁵COR⁷, -O(CH₂)_nCONR⁵R⁶, -NR⁵CO(CH₂)_nNR⁵R⁶ or -C(O)R⁷;

R² is hydrogen, C₁₋₆alkyl, halo, cyano or perfluoroC₁₋₆alkyl;

R³ is hydrogen or halo;

R⁴ is hydrogen, halo, phenyl, C₁₋₆alkyl or -NR⁵R⁶;

20 where

R⁵ and R⁶ are independently selected from hydrogen; Het; C₃₋₆cycloalkyl optionally substituted by C₁₋₆alkyl; or by C₁₋₆alkyl optionally substituted by Het, alkoxy, cyano or -NR^aR^b (where R^a and R^b which may be the same or different are hydrogen or C₁₋₆alkyl, or R^a and R^b together with the nitrogen atom to which they are attached may form a 4,5 or 6-membered saturated ring); or R⁵ and R⁶ together with the nitrogen atom to which they are attached form a 3, 4, 5, 6 or 7-membered saturated or unsaturated ring which may contain one or more heteroatoms selected from N, S or O, and wherein the ring may be

25

further substituted by one or more substituents selected from halo (such as fluoro, chloro, bromo), cyano, $-\text{CF}_3$, hydroxy, $-\text{OCF}_3$, C_{1-6} alkyl and C_{1-6} alkoxy;

R^7 is selected from hydrogen and C_{1-6} alkyl;

5 Het is a 5 or 6-membered C-linked heterocyclyl group which may be saturated, unsaturated or aromatic, which may contain one or more heteroatoms selected from N, S or O and which may be substituted by C_{1-6} alkyl; and

n is 1-4;

10 with the provisos that :

a) when A is thiazole (wherein the thiazole sulfur is on the same side as the 4-pyridyl moiety); X is N; R^1 is hydrogen, C_{1-6} alkyl, C_{1-6} alkoxy, halo, cyano, perfluoro C_{1-6} alkyl or perfluoro C_{1-6} alkoxy; R^2 is hydrogen, C_{1-6} alkyl, halo, cyano or perfluoro C_{1-6} alkyl; and R^3 is hydrogen or halo; then R^4 is not NH_2 ; and

15 b) when X is N, A is pyrazole (where the ring containing X is attached to the pyrazole ring at carbon atom next to a pyrazole ring nitrogen), R^2 is hydrogen then R^3 is not hydrogen.

20 2 A compound according to any preceding claim wherein A is imidazole optionally substituted by one R^4 substituent.

3 A compound according to any preceding claim wherein X is N.

25 4 A compound according to any preceding claim wherein R^1 is C_{1-6} alkyl, C_{1-6} alkoxy, halo, cyano, perfluoro C_{1-6} alkoxy, $-\text{NR}^5\text{R}^6$, $-(\text{CH}_2)_n\text{NR}^5\text{R}^6$, $-\text{O}(\text{CH}_2)_n\text{OR}^7$, $-\text{O}(\text{CH}_2)_n\text{-Het}$, $-\text{O}(\text{CH}_2)_n\text{NR}^5\text{R}^6$, $-\text{CONR}^5\text{R}^6$, $-\text{SO}_2\text{R}^7$, $-\text{NR}^5\text{SO}_2\text{R}^7$, $-\text{NR}^5\text{COR}^7$, $-\text{O}(\text{CH}_2)_n\text{CONR}^5\text{R}^6$, $-\text{NR}^5\text{CO}(\text{CH}_2)_n\text{NR}^5\text{R}^6$ or $-\text{C}(\text{O})\text{R}^7$.

30 5 A compound according to any preceding claim wherein R^2 is hydrogen, C_{1-6} alkyl or fluoro.

6 A compound according to any preceding claim wherein R^3 is hydrogen.

35 7 A compound according to any preceding claim wherein R^4 is hydrogen, phenyl, C_{1-6} alkyl or halo.

8 A compound according to any preceding claim wherein R⁵ and R⁶ are
independently selected from hydrogen; Het; C₃₋₆cycloalkyl optionally
substituted by C₁₋₆alkyl; or by C₁₋₆alkyl optionally substituted by Het, alkoxy,
5 cyano or -NR^aR^b (where R^a and R^b which may be the same or different are
hydrogen or C₁₋₆alkyl, or R^a and R^b together with the nitrogen atom to which
they are attached may form a 4, 5 or 6-membered saturated ring); or R⁵ and
R⁶ together with the atom to which they are attached form a morpholine,
piperidine, pyrrolidine or piperazine ring, each of which may be substituted by
10 halo (such as fluoro, chloro, bromo), cyano, -CF₃, hydroxy, -OCF₃, C₁₋₄alkyl or
C₁₋₄alkoxy.

9 A compound according to claim 1 wherein
A is imidazole;

15 X is N;
R¹ is C₁₋₆alkyl, C₁₋₆alkoxy, halo, cyano, perfluoroC₁₋₆alkoxy, -NR⁵R⁶,
-(CH₂)_nNR⁵R⁶, -(CH₂)_nOR⁷, -O(CH₂)_n-Het, -O(CH₂)_nNR⁵R⁶, -CONR⁵R⁶,
-SO₂R⁷, -NR⁵SO₂R⁷, -R⁵COR⁷, -O(CH₂)_nCONR⁵R⁶,
-NR⁵CO(CH₂)_nNR⁵R⁶ or -C(O)R⁷;

20 R² is hydrogen, C₁₋₆alkyl or fluoro;

R³ is hydrogen or halo;

R⁴ is hydrogen, phenyl, C₁₋₆alkyl or halo;

R⁵ and R⁶ are independently selected from hydrogen, Het or C₁₋₆alkyl; or R⁵
and R⁶ together with the atom to which they are attached form a
25 morpholine, piperidine, pyrrolidine or piperazine ring, each of which
may be substituted by halo (such as fluoro, chloro, bromo), cyano,
-CF₃, hydroxy, -OCF₃, C₁₋₄alkyl or C₁₋₄alkoxy;

R⁷ is selected from hydrogen and C₁₋₆alkyl;

Het is a 5 or 6-membered C-linked heterocyclyl group which may be
30 saturated, unsaturated or aromatic, which may contain one or more
heteroatoms selected from N, S or O and which may be substituted by
C₁₋₆alkyl; and
n is 1-4.

35 10 A compound according to claim 1 wherein the compound is selected from the
list:

4-{2-*tert*-Butyl-5-[6-methyl]-pyridin-2-yl-1*H*-imidazol-4-yl}-2-(4-methanesulfonyl-phenyl)-pyridine (Example 84);
 4-{4-[4-(2-*tert*-Butyl-5-[6-methyl]-pyridin-2-yl-1*H*-imidazol-4-yl)-pyridin-2-yl]-phenyl}-morpholine (Example 86);
 5 N-(tetrahydropyran-4-yl)-4-(4-{2-isopropyl-5-[6-methyl-pyridin-2-yl]-1*H*-imidazol-4-yl}-pyridin-2-yl)-benzamide (Example 96);
 4-{4-[4-(2-isopropyl-5-[6-methyl]-pyridin-2-yl-1*H*-imidazol-4-yl)-pyridin-2-yl]-phenyl}-morpholine (Example 97);
 4-(4-{4-[2-Isopropyl-5-(6-methyl-pyridin-2-yl)-1*H*-imidazol-4-yl]-pyridin-2-yl}-benzyl)- dimethyl-amine (Example 105);
 10 4-(4-{4-[2-Isopropyl-5-(6-methyl-pyridin-2-yl)-1*H*-imidazol-4-yl]-pyridin-2-yl}-benzyl)-morpholine (Example 104);
 N-(tetrahydropyran-4-yl)-4-(4-{2-*tert*-Butyl-5-[6-methyl-pyridin-2-yl]-1*H*-imidazol-4-yl}-pyridin-2-yl)-benzamide (Example 81);
 15 (4-{4-[2-*tert*-Butyl-5-(6-methyl-pyridin-2-yl)-1*H*-imidazol-4-yl]-pyridin-2-yl}-benzyl)-pyrrolidine (Example 103);
 4-(2-*tert*-Butyl-5-[6-methyl]-pyridin-2-yl-1*H*-imidazol-4-yl)-2-[4-(2-pyrrolidin-1-yl-ethoxy)-phenyl]-pyridine (Example 108); and
 4-{4-[4-(2-methyl-5-[6-methyl]-pyridin-2-yl)-1*H*-imidazol-4-yl]-pyridin-2-yl]-phenyl}-morpholine (Example 98);
 20 and pharmaceutically acceptable salts, solvates and derivatives thereof.

11 A pharmaceutical composition comprising a compound defined in any preceding claim and a pharmaceutically acceptable carrier or diluent.

12 The use of a compound defined in any one of claims 1 to 10 in the manufacture of a medicament for the treatment or prophylaxis of a disorder mediated by the ALK5 receptor in mammals.

13 The use according to claim 12 wherein the disorder is selected from chronic renal disease, acute renal disease, wound healing, arthritis, osteoporosis, kidney disease, congestive heart failure, ulcers, ocular disorders, corneal wounds, diabetic nephropathy, impaired neurological function, Alzheimer's disease, atherosclerosis, peritoneal and sub-dermal adhesion, any disease wherein fibrosis is a major component, including, but not limited to lung fibrosis, kidney fibrosis, liver fibrosis [for example, hepatitis B virus (HBV),

hepatitis C virus (HCV)], alcohol induced hepatitis, retroperitoneal fibrosis, mesenteric fibrosis, haemochromatosis and primary biliary cirrhosis, endometriosis, keloids and restenosis.

- 5 14 The use according to claim 13 wherein the disorder is kidney fibrosis.
- 15 A compound defined in any one of claims 1 to 10 for use as a medicament.